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(54) Title: COMPOSITIONS, SOLUTIONS, AND METHODS USED FOR TRANSPLANTATION

(57) **Abstract:** This invention discloses a method for reducing the intracellular lipid storage material of a cell, tissue, or organ for transplantation and features solutions, methods and kits that induce the metabolic elimination of lipid storage in a cell, tissue, or organ. In one exemplary approach, the process involves contacting a cell, tissue, or organ with a perfusate solution that include catabolic hormones and amino acids, at physiological conditions, to increase lipid export and lipid oxidation. If desired, the cell, tissue, or organ of the invention may also be heat shock preconditioned. The invention can be used to prepare, recondition, or store a cell, tissue, or organ for transplantation by increasing tolerance to ischemia-reperfusion and cold-preservation related injury.

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